
NT5D60AA CLASS Modem Card (XCMC)

Introduction

The NT5D60AA CLASS Modem card is introduced in X11 release 23 to support the Custom Local Area Signaling Services (CLASS) feature. The CLASS Modem card receives Calling Number and Calling Name Delivery (CND) data and time/date data from the system and transmits it to a line port, such as a port on an Analog Line card, which delivers the CND data to a CLASS telephone set when presenting the set with a new call.

For information about the CLASS: Calling Number and Name Delivery feature, please refer to the *X11 software features guide*. For administration and maintenance commands, see the *X11 input/output guide*.

Physical description

CLASS Modem cards are housed in NT8D37 Intelligent Peripheral Equipment (IPE) Modules or NT8D11 Common/Peripheral Equipment (CE/PE) Modules.

The CLASS modem card circuitry is mounted on a 31.75 cm by 25.40 cm (12.5 in. by 10 in.) double-sided printed circuit board. The card connects to the backplane through a 160-pin edge connector.

The faceplate of the CLASS modem card is equipped with a red light emitting diode (LED) that lights when the card is disabled. When the card is installed, the LED remains lit for two to five seconds as a self-test runs. If the self-test completes successfully, the LED flashes three times and remains lit until the card is configured and enabled in software, then the LED goes out. If the LED does not follow the pattern described or operates in any other manner (such as continually flashing or remaining weakly lit), the card should be replaced.

Functional description

The CLASS Modem card is designed to plug into any one of the peripheral card slots of the IPE module. The CLASS modem card supports up to 32 transmit-only modem resources, using a DS30X interface. Up to 255 modems may be configured per system.

The CND transmission process begins with the system software sending an initiating message to the CLASS Modem card indicating the length of the CND information and the type of the CND information flow to be transmitted. In response, the CLASS Modem card assigns a message buffer to capture the CND information from the system software.

System software then sends the CND information to the CLASS Modem card, one byte at a time, where it is stored in the message buffer. If the CLASS Modem card receives more bytes than were specified in the initiating message, then the additional bytes will be discarded and will not be included in the CND memory buffer.

Once all of the CND information has been stored in the memory buffer, the CLASS Modem card begins transmission when requested by the system software. Data is sent one ASCII character at a time. The CLASS Modem card inserts a start and stop bit to each ASCII character sent.

The transmission of the calling party name/number to the terminating set is accomplished via asynchronous FSK simplex-mode transmission at 1200 bits/second over a 2-wire loop, in accordance with the Bell 202 standard. The transmission is implemented by the the appropriate PCM equivalent of 1200 or 2200 Hz.

Upon completion of transmitting the CND data, the CLASS Modem card sends a message to the system software to indicate successful transmission of the CND data.

Eight modems can be associated with each module. Table 31 shows time slot mapping for the CLASS modem card.

Table 31
Time slot mapping

XCMC mapping of TNs		Modem units on the CLASS Modem card
TNs	DS30X timeslot	
00	00	module 0, 00
01	01	01
02	02	02
03	03	03
04	04	04
05	05	05
06	06	06
07	07	07
08	08	module 1, 00
09	09	01
10	10	02
11	11	03
12	12	04
13	13	05
14	14	06
15	15	07
16	16	module 2, 00
17	17	01
18	18	02
19	19	03

Table 31
Time slot mapping

XCMC mapping of TNs		Modem units on the CLASS Modem card
TNs	DS30X timeslot	
20	20	04
21	21	05
22	22	06
23	23	07
24	24	module 3, 00
25	25	01
26	26	02
27	27	03
28	28	04
29	29	05
30	30	06
31	31	07

Electrical specifications

This section lists the electrical characteristic of the CLASS modem card.

Data transmission specifications

[Table 32](#) provides specifications for the 32 transmit-only modem resources.

Table 32
CLASS modem card—data transmission electrical characteristics

Characteristics	Description
Units per card	32 transmit only modem resources
Transmission rate	1200 ± 12 baud

The CLASS modem card has no direct connection to the Public Network.

Power requirements

The CLASS modem card requires less than 1.0 Amps of +5V dc ± 1% supply supplied by the power converter in the IPE shelf.

Environmental specifications

[Table 33](#) shows the environmental specifications of the card.

Table 33
CLASS modem card—environmental specifications

Parameter	Specifications
Operating temperature	0° C to +65° C (+32 ° F to +149 ° F)
Operating humidity	5 to 95% RH (non-condensing)
Storage temperature	–50° C to +70° C (–58 ° F to +158 ° F)

Configuration

The NT5D60AA CLASS Modem card has no user-configurable jumpers or switches. The card derives its address from its position in the backplane and reports that information back to the Meridian 1 CPU via the Cardlan interface.

Software service changes

On systems which are equipped with either CNUMB or CNAME packages (packages 332 and 333 respectively), up to 255 CLASS Modem (CMOD) units can be configured in LD 13, and 500/2500 sets can be assigned as CLASS sets in LD 10 by assigning them CNUS, or CNUA and CNAA class of service. See the *X11 input/output guide* for LD 10 and LD 13 service change instructions.